Do Nonlocal Banks Hurt Rural Economies?

by Robert N. Collender[1]

The restructuring of commercial banking has heightened interest in its economic consequences both for the economy as a whole and for those most likely to bear adverse consequences: small businesses, small banks, and rural areas. Farm-dependent areas represent a confluence of these vulnerabilities. Previous research provides evidence on the interdependence of geographic restrictions on bank activities and economic growth at the national and state levels. This article presents evidence linking the relaxation of bank regulation, nonlocal bank entry, and subsequent changes in local economic growth. While metropolitan and nonmetropolitan areas generally benefit after geographic deregulation of banking, the impact on farm-dependent areas is more ambiguous.

Introduction

The restructuring of U.S. commercial banking has heightened interest in its economic consequences both for the economy as a whole and for those businesses and areas most likely to bear adverse consequences: small businesses, small banks, and rural areas (6, 8). Rural areas, especially those traditionally served by unit banks, have a long history of fear, suspicion, and antipathy toward bank consolidation and nonlocal control. Many rural residents and business people expect the current restructuring to harm their communities despite fairly compelling theoretical and empirical evidence that at least some degree of liberalization provides considerable overall economic benefits. These fears arise in part from northern European agrarian traditions that emphasized the need to limit banking firms. Regardless of the economic merits of these beliefs, they undergird support for restrictions on banking activities and remain politically important.[2]

This article reports on recent research by Collender and Shaffer that relates the relaxation of geographic restrictions on bank activity and the entry of nonlocally owned banks to subsequent economic growth in local markets (4). The process of relaxing or removing geographic restrictions is also called geographic liberalization. We define local markets as metropolitan statistical areas (MSA's) or nonmetropolitan counties. Locally-owned banks are those headquartered in the local market, while nonlocally-owned banks are those headquartered outside of the local market. To understand the potential impacts of bank restructuring on local growth, one must start with an understanding of (a) the unique characteristics of small, local banks, (b) the impacts of geographic liberalization and consolidation on bank behavior, and (c) the relationship between banking and economic growth. This article proceeds by reviewing each of these three areas. It then describes recent findings relating local economic growth in metropolitan, nonmetropolitan, and farm-dependent areas to bank restructuring.

Why Local Banks Might Be Different

Small, local banks may behave differently from larger and nonlocal banks for a variety of reasons, including superior access to local information, greater commitment to local prosperity, and differences in technology (cost structure) or risk management related to bank size. Under regulations limiting the geographic span of bank activity, the behavior of local banks may also reflect both their degree of protection from competition and their limited lending options.

Superior Access to Local Information. Many bank loan customers, especially small businesses, are informationally opaque—that is, their financial conditions are not easy to assess or monitor. Bank lending is information intensive, relying on essentially privately developed data and analysis to assess loan requests and to monitor borrowers' financial conditions and their adherence to loan terms. The intensity of initial information gathering and subsequent monitoring implies that the location of a bank's offices relative to its borrowers may be important because the costs of these activities increase with distance. Deposit and transaction accounts can also provide low-cost financial data valuable for assessing loan requests and monitoring loan customers. Since deposit relations are largely local, they strengthen the likelihood that locally active banks will have an information advantage over other lenders in serving these informationally opaque borrowers.

Greater Commitment to Local Prosperity. One premise of geographic restrictions on bank activity is that tying the fortunes of banks and bank managers to specific locations will increase their commitment to achieving local economic prosperity. Calomiris argued that established middle-class agricultural interests have historically favored entry restrictions because such restrictions create location-specific bank capital that impedes the shifting of bank lending to more lucrative locations in the short run (3). Since creditworthiness relies on wealth and wealth can depend, at times, on the continued availability of loans, location-specific banks provide a safety net in the short run, even though in the long run they may prove unable to survive occasional severe market-wide shocks.

Differences in Technology, Costs, and Risk Management. While geographic restrictions may tie banks to local prosperity, these restrictions may also affect bank behavior. Both theoretical and empirical evidence suggests that small, independent banks, branching banks, and holding company

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[2] For example, Texas and Montana opted out of interstate branching and Colorado considered doing so as authorized in the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. However, the Office of the Comptroller of the Currency (OCC, regulator of national banks) ruled that opting out does not prevent nationally chartered (as opposed to State-chartered) banks from branching across State lines. This ruling caused the Texas Commissioner of Banking to nullify rules prohibiting interstate branching since they put State-chartered banks at a competitive disadvantage.

affiliates use different technologies and face different costs related to lending, funding, general operations, and risk management. Such differences are likely to be most substantial in the smaller, less diversified economies that prevail in rural areas.

With respect to lending technology, smaller banks are more likely to rely on relationship lending while larger banks are more likely to undertake transactions-based lending. Relationship lending depends on detailed knowledge of a business, its owner's character and reputation, and its local market. In contrast, transaction-based lending is often collateral-based, relies on readily available and verifiable information, and relies on statistical underwriting based on large numbers of similar loans.

With respect to funding, small banks are much more likely to rely on deposits to fund loans and much less likely to use nonlocal, nondeposit funds than are larger banks (8). This reliance on local deposits reflects, in part, agency problems faced by small banks. Correspondent banks are, at times, unwilling to accept loans originated by small banks as collateral or may be reluctant to extend liquidity to small banks during periods of tight monetary policy. Economic theory and empirical evidence also suggest that the ability of small banks to raise deposits may constrain their lending activity and cause them to hold more cash and securities and fewer loans relative to banks less dependent on local deposits.

With respect to operating costs, small, independent banks may be more costly to establish and operate than either same-size bank branches or affiliates of bank holding companies (BHC's). Branches and BHC affiliates share some of their fixed costs with a larger asset base. Larger branching banks and holding company affiliates can also share resources at the company level, potentially increasing the returns to specialized human capital. In theory, such cost advantages would allow branches and holding company affiliates to provide services in remote areas. The dispersion of bank offices is consistent with such cost advantages.

With respect to risk management, banks that operate in relatively small and economically homogenous geographic areas cannot easily diversify the credit risks in their loan portfolios. To compensate for this inability to diversify, small banks on average hold more equity capital and liquid assets than larger banks.

Protection from Competition. Some protection from competition was an explicit part of geographic limits on banking activity, and empirical evidence indicates such protection affects bank behavior. The importance of banking as a source of revenue aligned the interests of State governments with those of established State-chartered banks with respect to limiting competition among banks and prohibiting operations by banks chartered in other States. Banks operating in protected markets are more likely to charge higher rates on loans, pay lower rates on deposits, and be inefficient.

Geographic Liberalization, Consolidation, and Bank Behavior

A large literature has studied the impact of restructuring on a variety of measures of bank performance (2). With successive liberalizations of geographic restrictions and the increased consolidation of commercial banking, researchers have focused on the relationship between the geographic span of bank activity and various measures of bank performance. Areas of such research include lending quantity and quality, operating efficiency, loan and deposit pricing, bank risk management (loan portfolio diversification), and the competitiveness of various industry segments—especially nonlocal and small community banks. Of particular interest to rural areas are the impacts of liberalization and consolidation on bank exercise of market power, lending to small business and agriculture, and small bank competitiveness.

Consolidation between banks operating in the same geographic areas increases local concentration, while that involving institutions with mutually exclusive territories is unlikely to affect local concentration directly. The potential of banks to exercise market power is of particular concern to rural areas since rural banking markets are on average significantly more concentrated than urban markets. Survey evidence indicates that households and small businesses overwhelmingly rely on financial institutions with a local physical presence. The physical barriers (e.g., distance) and economic barriers (e.g., limited overall market size) to effective competition in many rural areas are considerably greater than in urban areas. Despite the association between local measures of concentration and prices, some evidence points to a decrease in market power over time. Markets for banking services are increasingly contestable, in part, because the removal of geographic restrictions lowers barriers to entry in local markets. New delivery alternatives and changes in consumer behavior (ATM's, telephone banking, internet banking, and increased use of credit and debit cards) also increase the geographic span of bank activities.

The fact that rural businesses tend to be small and to rely on local banks might suggest that bank consolidation could reduce the credit available to small businesses. Large banks lend proportionately fewer assets to small businesses. However, countervailing forces imply that consolidation is not always bad for small borrowers, and empirical evidence indicates little cause for concern except for transitional disruptions. While consolidations of large organizations often reduce small business lending, most consolidations involving small banks increase rather than decrease small business lending. Consolidations among smaller banking organizations generally lead to a shift in assets to more small business loans. In rural areas, mergers among small- and medium-sized banking organizations have been more prevalent than in metropolitan areas, mitigating the adverse impact of consolidation on rural farms and small businesses. Even where consolidating banks reduce their small business lending, evidence suggests that other lenders, including newly chartered banks have a countervailing effect. Bank consolidation can also improve services to small customers during economic downturns, since large, complex banks are likely to be better diversified and therefore less vulnerable to

local conditions. Large banks or multibank holding companies may also have more funding alternatives and more options for raising capital.

If small banks are not fully competitive with large banks, then the larger banks could enjoy greater ability to exercise market power in smaller rural banking markets and consumer welfare could suffer. A loss of local control could also result in an outflow of local savings to large metropolitan centers except as limited by the Community Reinvestment Act (CRA), with small businesses facing reduced access to financial services. While little evidence of reduced competition exists, larger banks may have significant competitive advantages over smaller banks. These advantages arise from two sources: scale and diversification.

As indicated in this review, several factors suggest that nonmetropolitan areas could fare differently from metropolitan areas when geographic constraints on bank activity are lifted. For example, Calomiris provided historical evidence that efficiency costs imposed on local economies by limits on branching may be greater in rural areas (3). Bank-dependent borrowers in rural areas have faced high external finance costs due to scarce bank capital, cyclical and seasonal credit contractions, and additional costs when local banks failed because of inefficiently diversified portfolios. However, countervailing benefits to at least some rural interests may accompany geographic restrictions. Calomiris cited "loan" and "wealth" insurance. Recent research suggests the impact of market concentration may be ambiguous if it arises from competitive advantages in contestable markets, or if increased competition sufficiently increases the riskiness of bank lending. Moreover, loss of local control and a reduced commitment to local growth could lead to a reduction in relationship-based lending that is important to the creditworthiness and viability of many small businesses.

The Finance Sector and Economic Growth

A better indicator of the economic impact on local markets of liberalization and consolidation is their overall impact on economic growth. Such indicators as changes in the quantity of lending, pricing, or bank competitiveness are limited measures of efficiency because of the strong likelihood that the starting points themselves were inefficient. For example, an increase in small business lending following geographic liberalization may be consistent with either an efficiency gain or an efficiency loss. A gain might arise if pre-existing geographic restrictions induced conservative lending policies to compensate for inefficient diversification or allowed a local bank to exercise market power. Conversely, a loss might occur if funding expands for projects with high risk or negative expected net present value. Therefore, while direct measures of loan volume and pricing can provide valuable indicators of winners and losers from liberalization, it is not clear that they provide information about whether the result is economically efficient or socially desirable.

In recent years, researchers have found increasing support for the hypothesis that financial development precedes and facilitates economic growth. Of particular interest is the work of Jayaratne and Strahan (7). They explored the relationship between the banking sector and economic growth in the context of the liberalization of branching restrictions by U.S. States. They provided evidence that real per capita growth rates, of both personal income and gross State product, increase significantly following intrastate branching reforms. Our work tests whether these relationships extend to the local market level. In particular, we explore the relationship between economic growth rates in local markets and geographic liberalization, market structure, and bank ownership structure using empirical models based on those that have already appeared in the finance and growth literature. We also test for differences in these relationships in metropolitan and nonmetropolitan areas.

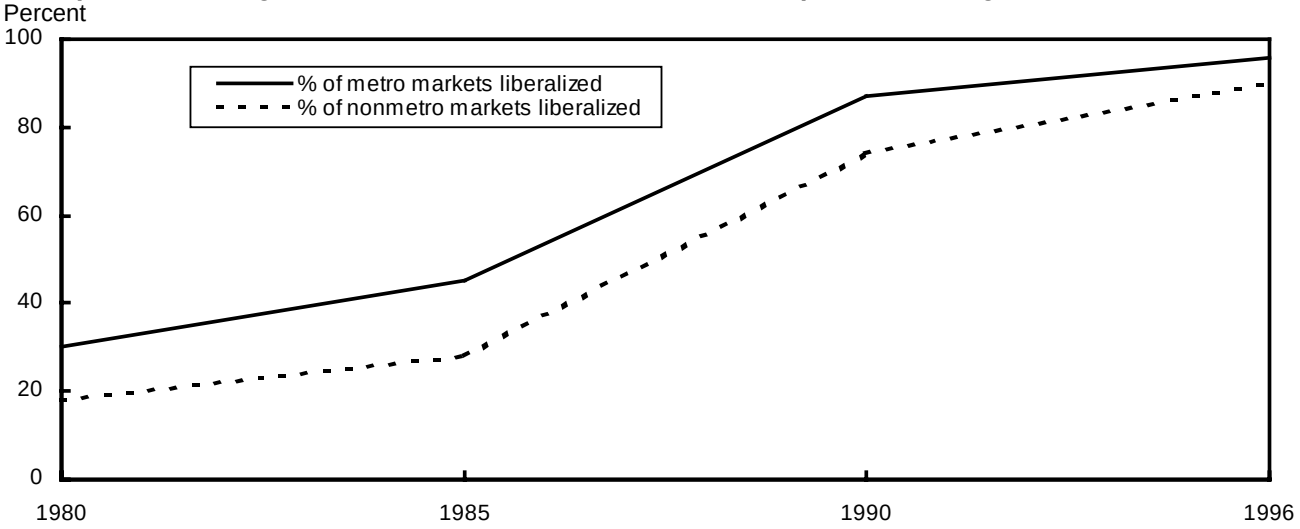
We investigate hypotheses concerning the economic growth benefits associated with changes in bank ownership and bank market structure and their relation to metropolitan and nonmetropolitan markets. The empirical work reported below resembles other work in the finance and growth literature. Following Jayaratne and Strahan (hereafter J&S), we model the local growth impacts of changes in geographic regulations (7). We extend this model to consider the impacts of the location of bank office ownership (in-market or out-of-market) and the location of control of local bank deposits.

Local Economic Growth and Geographic Deregulation, Bank Market Structure, Bank Ownership, and Deposit Control. J&S model State-level economic growth as a function of geographic deregulation while controlling for time-specific growth shocks and State-specific growth trends. To isolate the impact of changes that may be associated with geographic liberalization, we augment J&S's basic model in two stages. First, we control for local bank market concentration using the Herfindahl-Hirschman index (HHI) of bank deposits, which is the sum of squared market shares for all market participants. Next, we control for in-market and out-of-market ownership of bank offices and control of bank deposits. These variables allow us to distinguish whether the relationship between local growth and out-of-market control of banking activity, rather than other activities related to ownership of local bank offices, is specifically related to deposit control. Geographic deregulation has typically occurred in two stages (1). In the first stage, multibank holding companies (MBHC's) may convert subsidiary banks into branches and may expand geographically through acquisition and conversion of existing banks. In the second stage, banks are allowed to expand geographically by establishing new (*de novo*) branches anywhere in the State.

This specification allows testing of hypotheses relating local economic growth to geographic liberalization, local market growth, and the loci of bank office ownership and of control of local deposits (in-market and out-of-market). First, we test for a statistically significant relationship between our explanatory variables and local economic growth, both jointly and individually:

Figure B-1a

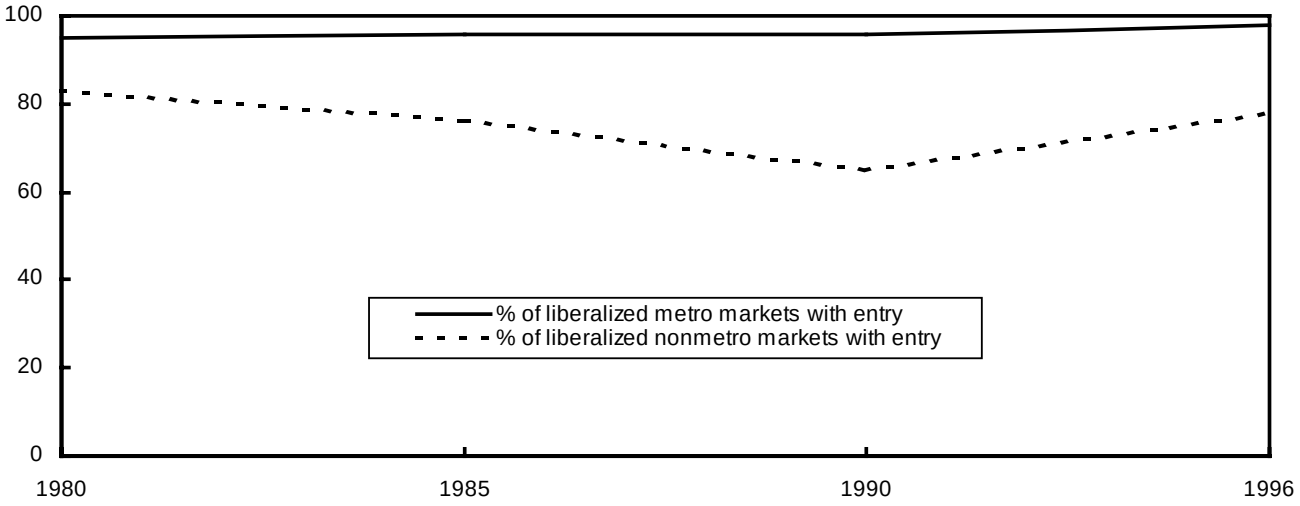
Metropolitan banking markets liberalized earlier than nonmetropolitan banking markets



Source: (4).

Figure B-1b

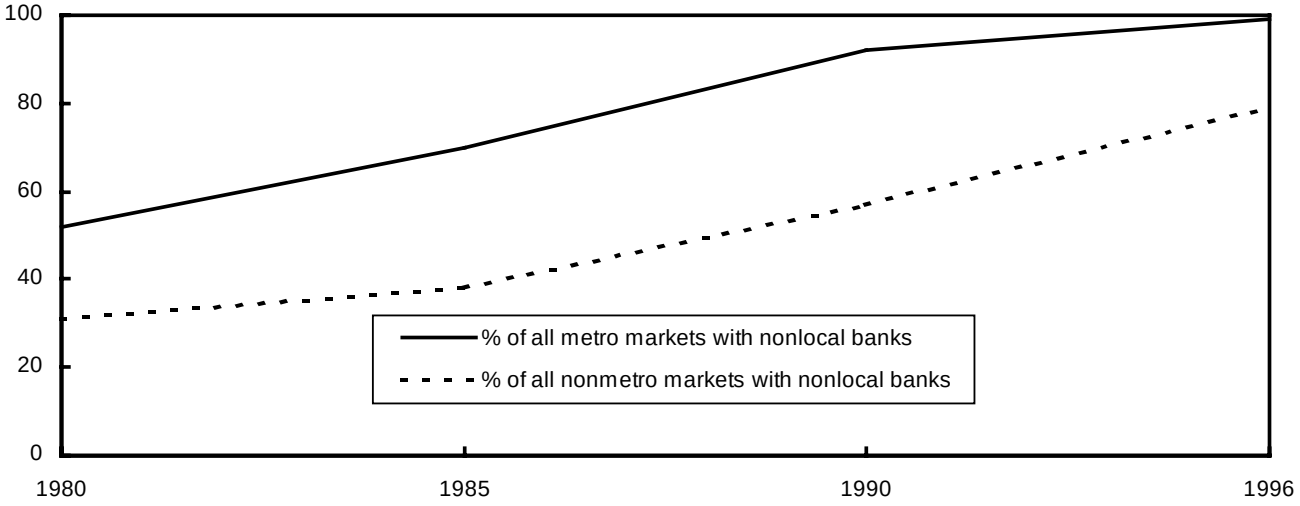
And nonlocal entry occurred sooner after liberalization in metropolitan banking markets



Source: (4).

Figure B-1c

Leading to relatively fewer nonmetropolitan banking markets with nonlocally owned bank offices



Source: (4).

- H1: Short-run, local economic growth is independent of bank deposit market concentration, the distribution of nonlocal and local bank office ownership, and the distribution of nonlocal and local control of local deposits.
- H2: Local growth is independent of bank deposit market concentration.
- H3: Local growth is independent of the number of local bank offices.
- H4: Local growth is independent of the quantity of local deposits.

Then, we test whether the coefficients on each pair of variables related to local and nonlocal control are the same. That is, we test whether the relationship of growth to nonlocally owned offices or nonlocally owned deposits is the same as the relationship of growth to locally owned bank offices or locally owned deposits.

- H5: The locus of local bank office ownership (in-market or out-of-market) is irrelevant to local growth.
- H6: The locus of control of local bank deposits (in-market or out-of-market) is irrelevant to local growth.

The results of the hypotheses tests directly address the concerns of nonmetropolitan areas regarding the potentially negative impact of loss of local control over bank capital and deposits.

Sample Statistics and Correlations. We separate our sample into metropolitan and nonmetropolitan markets. Univariate statistics and pairwise correlations reveal several distinguishing characteristics of these markets. During the period 1981-96, annual growth in real per capita personal income was about 0.15 percentage points faster in nonmetropolitan markets (1.58 percent per year) than metropolitan areas (1.43 percent), on average.

Compared with metropolitan markets, nonmetropolitan markets average far fewer bank offices (8 versus 152), higher market concentration (HHI of 4,190 versus 1,779), and far lower levels of total deposits ($159 million versus $6 billion). Standard deviations and coefficients of variation (ratios of the standard deviation to the mean) on these variables indicate that nonmetropolitan markets are more alike in both absolute and relative terms than are metropolitan markets, the latter being skewed by such megalopolises as New York, Los Angeles, and Chicago. About 25 percent of nonmetropolitan markets are defined by USDA as farm dependent. Farm dependent markets on average grew faster (2.16 percent per year), had fewer banks (4) and deposits ($76 million), and were even more concentrated (HHI of 5,129) than other nonmetropolitan markets.

Nonmetropolitan markets have experienced geographic liberalization at a slower pace and entry by nonlocal firms has been less likely after liberalization. Figure B-1 graphs the rates of liberalization and entry into metropolitan and nonmetropolitan markets. The relatively slow rate of entry into nonmetropolitan markets is consistent with Calomiris' work on the political economy of geographic restrictions in banking (3). Despite these observations, control of local banking markets by out-of-market banks is surprisingly similar in nonmetropolitan and metropolitan markets: out-of-market banks controlled 27 percent of nonmetropolitan bank offices (versus 29 percent of metropolitan) and 26 percent of nonmetropolitan bank deposits (versus 28 percent of metropolitan).

Striking differences between rural and urban pairwise correlations appeared in one or two instances. The correlation between the numbers of in-market and out-of-market owned bank offices is 0.01 in nonmetropolitan areas but 0.48 in metropolitan markets. That is, in-market and out-of-market office numbers often exhibit similar structures in metropolitan markets but not in nonmetropolitan markets. A corresponding contrast arises in in-market vs. out-of-market controlled deposits. Table B-1 contains descriptive statistics.

Results

Model estimates are presented in table B-2 and results of hypotheses tests are presented in table B-3. The coefficients related to geographic liberalization remain positive, statistically significant, and economically important. The ratio of the impact of each stage of liberalization—first consolidations through holding company acquisitions and mergers and then *de novo* branching—is similar in nonmetro areas versus metro areas, with nonmetro areas experiencing about two-thirds the increase in growth experienced in metro areas. The results are quantitatively and qualitatively similar to earlier findings by J&S, but indicate a proportionately greater impact on metropolitan than on nonmetropolitan areas. This conclusion holds both in absolute and relative terms. Over the period covered by our data, 1981-96, real per capita personal income grew at an average annual rate of 1.43 percent in metropolitan markets and 1.58 percent in nonmetropolitan markets. Our results suggest that geographic liberalization was associated with an average increase in expected growth of about 85 percent in metropolitan markets and of about 56 percent in nonmetropolitan markets.

At a minimum, these findings may mitigate concerns that shifts toward nonlocal ownership of local bank offices or nonlocal control of local deposits might adversely affect local economic performance. Statistical hypothesis tests indicate that bank office numbers, bank deposits, and deposit market concentration jointly have a statistically significant association (at the 1-percent confidence level) with local economic growth (H1) in both metro and nonmetro markets. Individually, deposit market concentration maintains its statistically significant negative association (at the 5-percent confidence level) with local economic growth (H2) in metro but not in nonmetro markets. Statistical tests indicate that the number of bank offices (H3) and the amount of bank deposits (H4) are significantly related to economic growth in nonmetro areas only, but there is no evidence that differences in the locus of ownership of bank offices (H5) or control of bank deposits (H6) affects these associations. There is, however, weak evidence (statistically significant at the 10-percent confidence level) that local growth in metropolitan markets is more negatively associated with out-of-market bank office ownership than in-market ownership (H5).

Farm-Dependent Counties. Much of the concern about nonlocal bank ownership has agrarian roots. To shed further light on these concerns, we report results for farm-dependent

Table B-1—Metro and nonmetro sample statistics, 1981-96

	Metro (4,272 obs.)		Nonmetro (36,128 obs.)		Farm Dependent (8,848 obs.)	
Variable	*Mean*	*Std Dev*	*Mean*	*Std Dev*	*Mean*	*Std Dev*
Annual growth in real per capita personal income (percent)	1.43	2.4	1.58	7.4	2.16	11.9
Locally owned bank offices	118.02	281.899	5.52	5.048	3.409	2.940
Nonlocally owned bank offices	34.30	75.040	2.36	4.175	0.995	1.860
Locally controlled deposits (in millions)	4,046	14,081	94	98	61	54
Nonlocally controlled deposits (in millions)	781	2,452	34	68	15	42
Percent of markets allowing mergers and acquisitions	69		58		52	
Percent of markets allowing de novo branching	52		37		31	
Market concentration index	1,779	793	4,190	2,378	5,124	2,859
Ratio of bank offices owned out-of-market	0.294	0.287	0.275	0.348	0.245	0.357
Ratio of local bank deposits controlled out-of-market	0.284	0.307	0.258	0.354	0.222	0.359

Source: (4).

Table B-2—Sign and statistical significance of estimated relations

	Real per capita income growth (weighted by total personal income)		
	Metro	Nonmetro	Farm-dependent counties
Locally owned bank offices	+ / --	+ / *	+ / --
Nonlocally owned bank offices	- / ***	+ / **	+ / --
Locally controlled deposits	+ / ***	- / *	- / ***
Nonlocally controlled deposits	- / --	- / *	- / --
De novo branching allowed	+ / **	+ / ***	+ / --
Mergers and acquisitions allowed	+ / *	+ / *	- / *
Market concentration index	- / **	- / --	- / **

T-statistic in parentheses.
Two-tailed significance levels:
* significant at 1 percent (t > 2.550)
** significant at 5 percent (2.550 > t > 1.960)
*** significant at 10 percent (1.960 > t > 1.645)
-- not statistically significant

Source: (4).

Table B-3— Hypothesis tests from weighted regressions for short-run models

Hypothesis	Metro	Nonmetro	Farm-dependent counties
H1: bank ownership and market structure	*	*	--
H2: concentration	**	--	**
H3: office ownership	--	*	--
H4: deposit control	--	*	--
H5: office ownership differences	***	--	--
H6: deposit control differences	--	--	--

Two-tailed significance levels:
* statistically significant at 1 percent
** statistically significant at 5 percent
***statistically significant at 10 percent
-- not significant

Source: (4).

rural counties (tables B-2 and B-3). USDA defines counties as farm-dependent if farm income averages more than 20 percent of total income from 1987 to 1989 (5). Over the 1981-96 period, real per capita personal income grew in farm-dependent markets by 2.16 percent on average each year. The results differ in striking ways from those for other rural or urban banking markets, lend support to Calomiris' wealth insurance hypothesis, and suggest that an empirical basis may exist for agrarian misgivings about liberalization. In contrast to other rural markets, results from the short-run models indicate that reduced growth is associated with geographic liberalization in farm-dependent markets (H1). However, this result is not robust when local business cycles are considered (4). In addition, the negative association between deposit market concentration and growth is stronger in farm-dependent markets than in other rural markets (H2). Each of these results is statistically significant at the 5-percent confidence level. As in other rural markets, there is no evidence that the locus of ownership of local bank offices or the locus of deposit control affects short-run growth rates.

Conclusions and Policy Implications

Local banks may behave differently from nonlocal banks because of superior access to local information, greater commitment to local prosperity, and differences in technology or risk management, both of which tend to be related to bank size. A large body of empirical research exists on the impacts of deregulation, concentration, and out-of-market entry on bank behavior. This research has focused on changes in loan portfolio size, allocation, and quality, operating efficiency, risk management, loan and deposit pricing, and small bank competitiveness following liberalization or bank consolidations. Research results provide evidence that liberalization often affects bank behavior and that large banks often behave differently from small banks. However, this research does less to address the underlying issue of whether these differences are beneficial or detrimental to local economies.

Another line of research has sought to relate financial market structures to economic growth. Both international and domestic studies have found important positive linkages between financial markets and growth. The research presented here extends this line of inquiry by relating bank market structure and regulatory change to economic growth at the local market level. A central issue is the distribution of the previously documented positive relationship between geographic deregulation and State-level growth among metropolitan and nonmetropolitan areas. Other important issues revolve around the impacts of bank market concentration, out-of-market ownership of local bank offices, and out-of-market control of local deposits. To illuminate these issues, we estimated separate models for metropolitan, nonmetropolitan, and farm-dependent markets. The latter markets are a subset of nonmetropolitan markets and are of interest because of the historic link between these markets and restrictions on bank branching.

Our results generally support the importance of the linkage between geographic liberalization and local growth in the short run. Estimates of this impact in metropolitan markets ranged as high as 1.22 percent per year or 85 percent of expected growth rates. Nonmetropolitan markets exhibited a smaller but still important impact of 0.88 percent per year or 56 percent of expected growth rates. While tests indicated that market structure was statistically significant, the location of neither bank office ownership nor deposit control was statistically related to short-run growth in nonmetropolitan areas. However, in metropolitan areas, out-of-market ownership of bank offices was associated with lower short-run growth rates, though the magnitude of this effect is economically small.

Results from farm-dependent markets, however, remind us that these results reflect average and not universal associations. In farm-dependent markets, liberalization was associated with a decrease in short-run growth, and initial levels of out-of-market bank ownership were associated with a fall in long-run growth in the more recent period. However, this result is not statistically robust when local business cycles are taken into consideration. These findings suggest that out-of-market bank mergers or acquisitions need not, ceteris paribus, impair local economic growth, and may even have beneficial effects in many rural markets.

References

1. Amel, Dean F., no date, "State Laws Affecting the Geographic Expansion of Commercial Banks." Unpublished paper. Board of Governors of the Federal Reserve System. Washington, DC.

2. Berger, Allen N., Rebecca S. Demsetz, and Philip E. Strahan, 1999, "The consolidation of the financial services industry: Causes, consequences, and implications for the future," *Journal of Banking and Finance* 23, pp. 135-194.

3. Calomiris, Charles W., 1993, "Regulation, Industrial Structure, and Instability in U.S. Banking," in *Structural Change in Banking*, M. Klausner and L. White, eds., Business One Irwin, Homewood, IL, pp. 19-116.

4. Collender, Robert N., and Sherrill L. Shaffer, 2000, *Local Bank Office Ownership, Deposit Control, Market Structure, and Economic Growth*, U.S. Department of Agriculture, Economic Research Service, Technical Bulletin Number 1886.

5. Cook, Peggy J., and Karen L. Mizer, 1994, *The Revised ERS County Typology*, U.S. Department of Agriculture, Economic Research Service, Rural Development Research Report Number 89.

6. Federal Reserve Bank of Kansas City, 1997, *Financing Rural America*, Kansas City, MO.

7. Jayaratne, Jith and Philip E. Strahan, 1996, "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation," *Quarterly Journal of Economics* 111 (3), August, 639-670.

8. U.S. Department of Agriculture, 1997, *Credit in Rural America*, Agricultural Economic Report No. 749. Economic Research Service, Washington, DC.